

**BALD HEAD ISLAND SETTLEMENT MONITORING SURVEYS
CYCLE 2, REPORT 4
February 2008**

Introduction

The 4th set of monitoring surveys of the 2nd cycle for the Settlement Agreement between the Village of Bald Head Island and the United States Army Corps of Engineers was taken in February 2008. The criteria to be used in examining the surveys is to be a continuous passage through Smith Island Channel, Baldhead Shoal Channel Reach 1 and Baldhead Shoal Channel Reach 2 with a minimum bottom width of 500 feet at a depth of -42 feet mean lower low water (mllw). This report is the fourth in this series.

Data

The 3rd set of monitoring surveys taken in November 2007 is displayed in Figure 1 and is labeled November 2007 Surveys. Figure 2 is a plot of surveys taken in February 2008 and Figure 3 is a difference plot between the November 2007 and February 2008 surveys. Figure 4 is a difference plot between the June 2007 and February 2008 surveys.

A plot for Smith Island Channel of the navigable widths at a depth of -42 feet mllw (navigable depth) is shown in Figures 5 and 6. MLLW is 2 inches lower than mlw at Bald Head Island. Plots of the minimum channel cross sections at stations 13+00 and 19+00 are shown in Figures 7 and 8. The baselines for the cross section plots are shown in Figure 1.

A plot for Baldhead Shoal Channel Reach 1 of the navigable widths at a depth of -42 feet mllw is contained in Figures 9 and 10. Plots of the minimum channel cross sections in the vicinity of the spit at stations 20+00 and 21+00 are shown in Figures 11, and 12.

A plot for Baldhead Shoal Channel Reach 2 of the navigable widths at a depth of -42 feet mllw is contained in Figures 13 and 14. Plots of the minimum channel cross sections at stations 45+00, 46+00, and 47+00 are shown in Figures 15, 16, and 17.

Conclusion

The minimum navigable width at a depth of -42 feet mllw is more than 500 feet at all stations in Baldhead Shoal Channel Reach 1 and 2 and Smith Island.

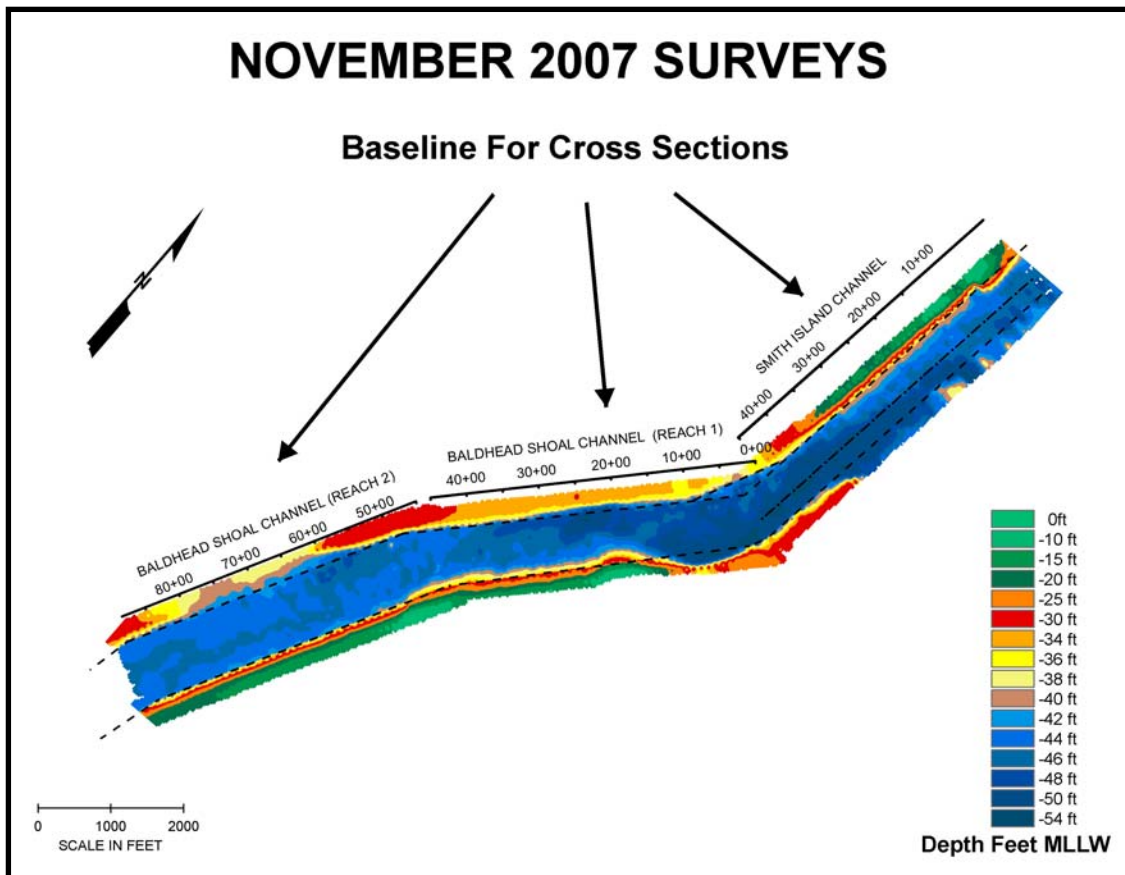


Figure 1 November 2007 Surveys

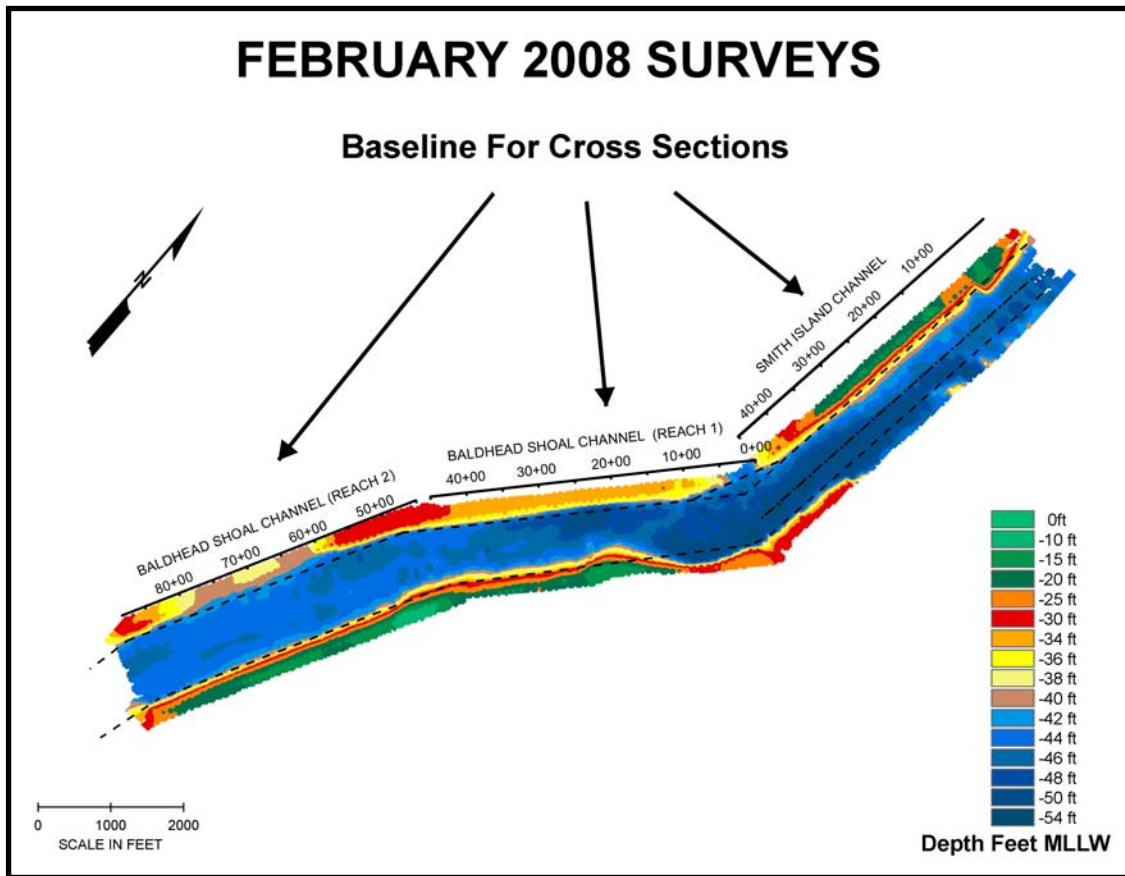


Figure 2 February 2008 Surveys

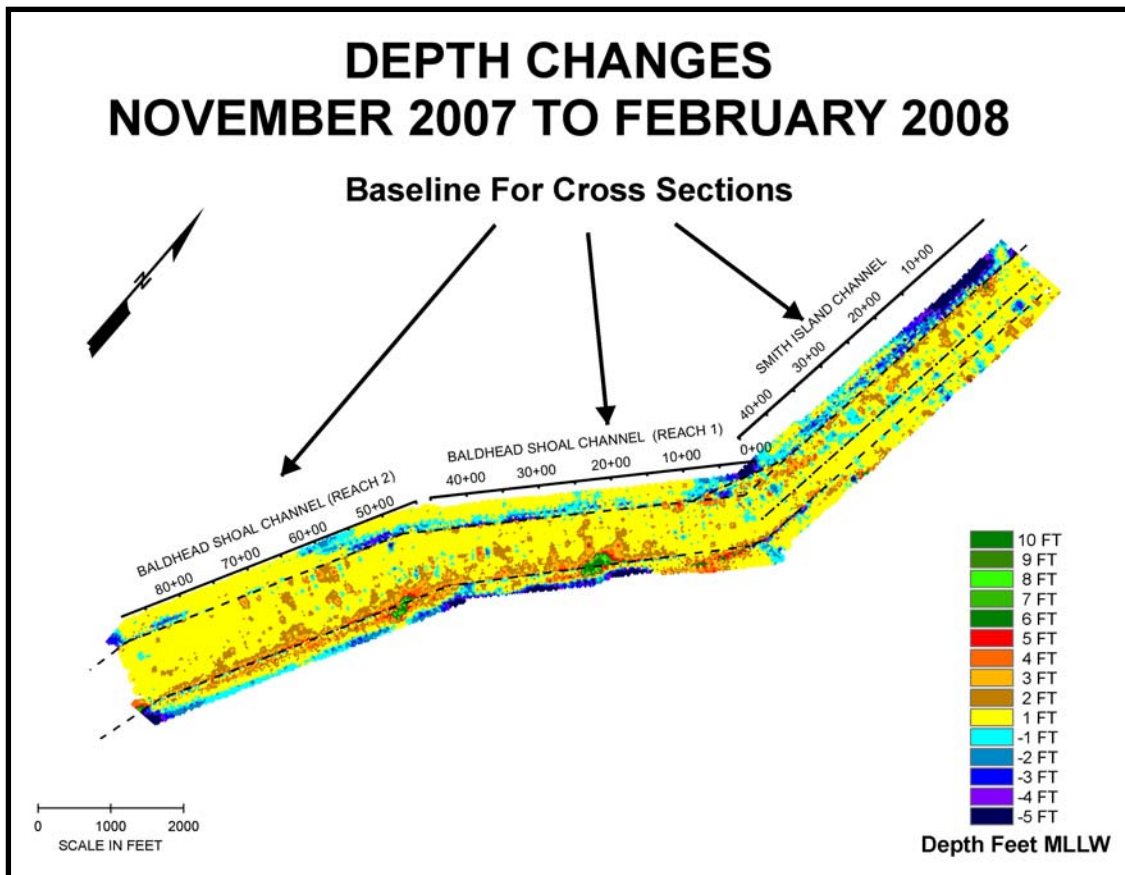


Figure 3 November 07 to February 2008 Depth

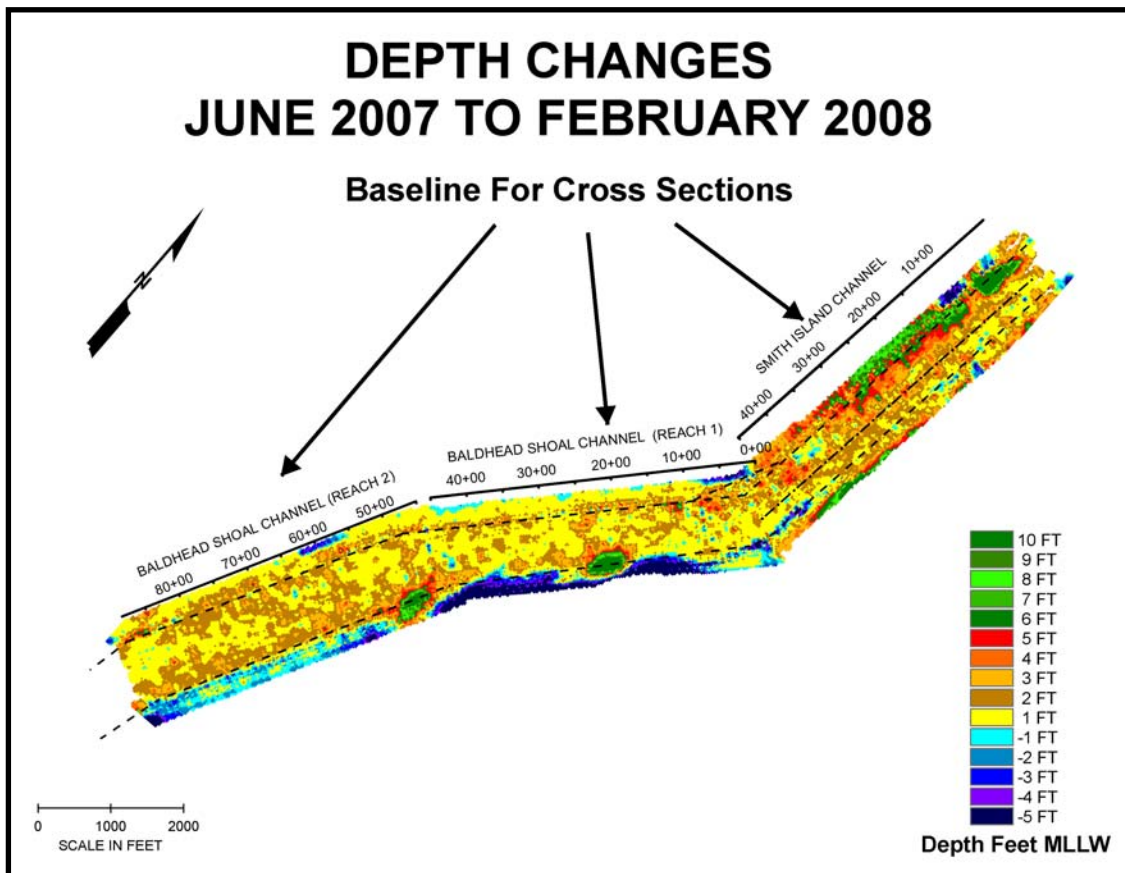


Figure 4 June 07 to February 2008 Depth Changes

SMITH ISLAND CHANNEL NAVIGABLE WIDTHS

Mar-07 Jun-07 Sep-07 Nov-07 Feb-08

Navigable widths are measured at -42 ft mllw

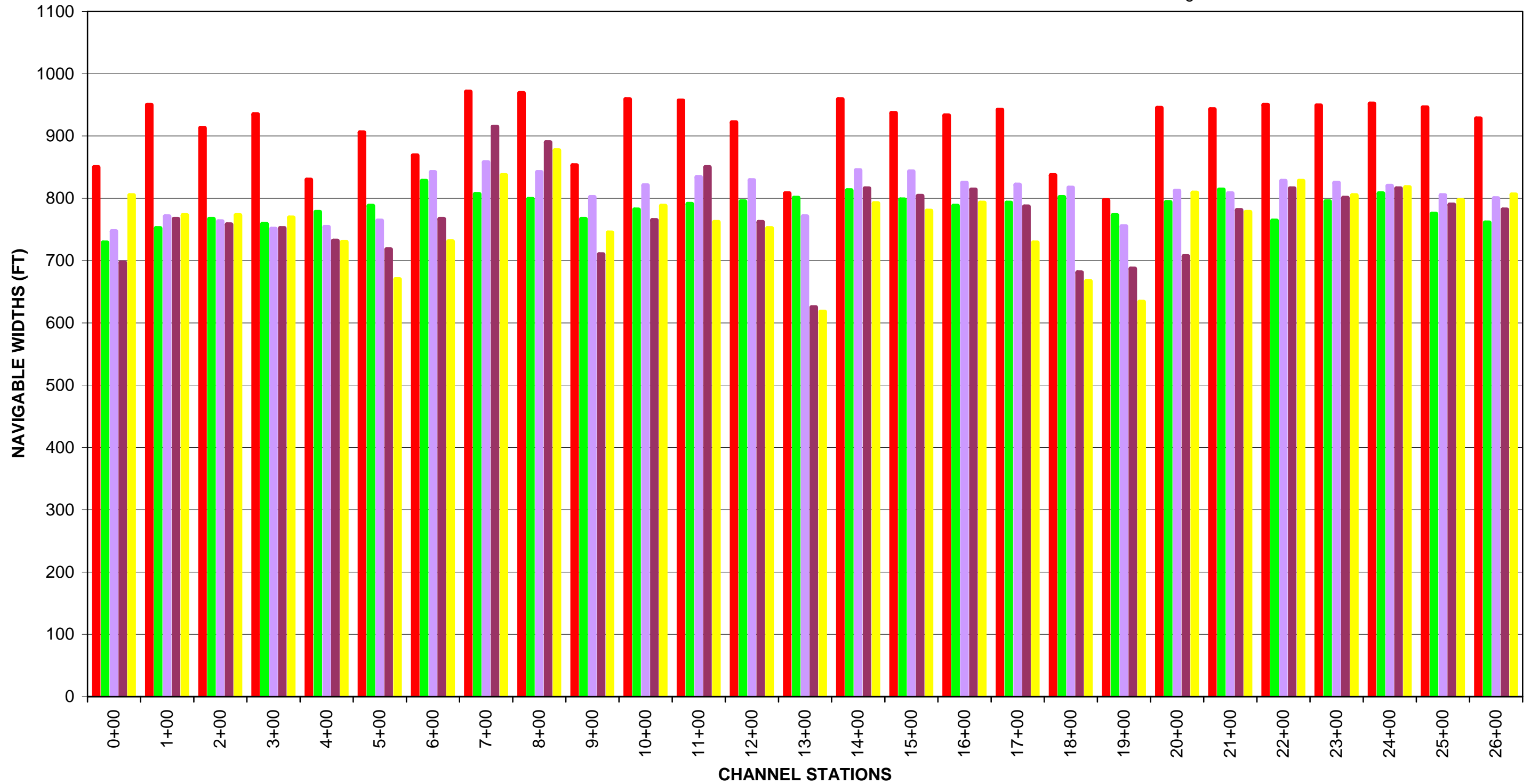


Figure 5 Smith Island Channel Navigable Widths – Stations 0+00 – 26+00

SMITH ISLAND CHANNEL NAVIGABLE WIDTHS

Mar-07 Jun-07 Sep-07 Nov-07 Feb-08

Navigable widths are measured at -42 ft mllw

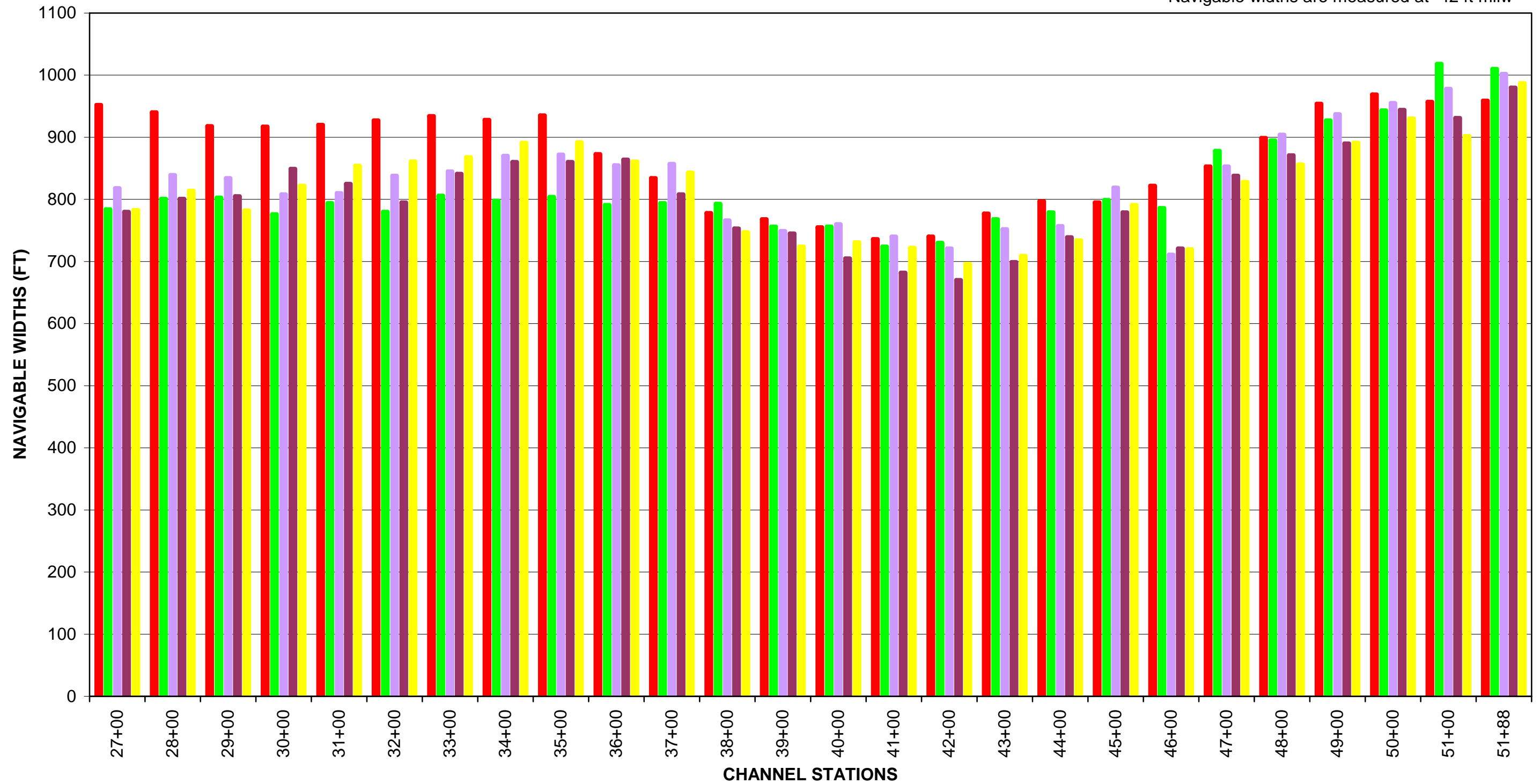


Figure 6 Smith Island Channel Navigable Widths – Stations 27+00 – 52+00

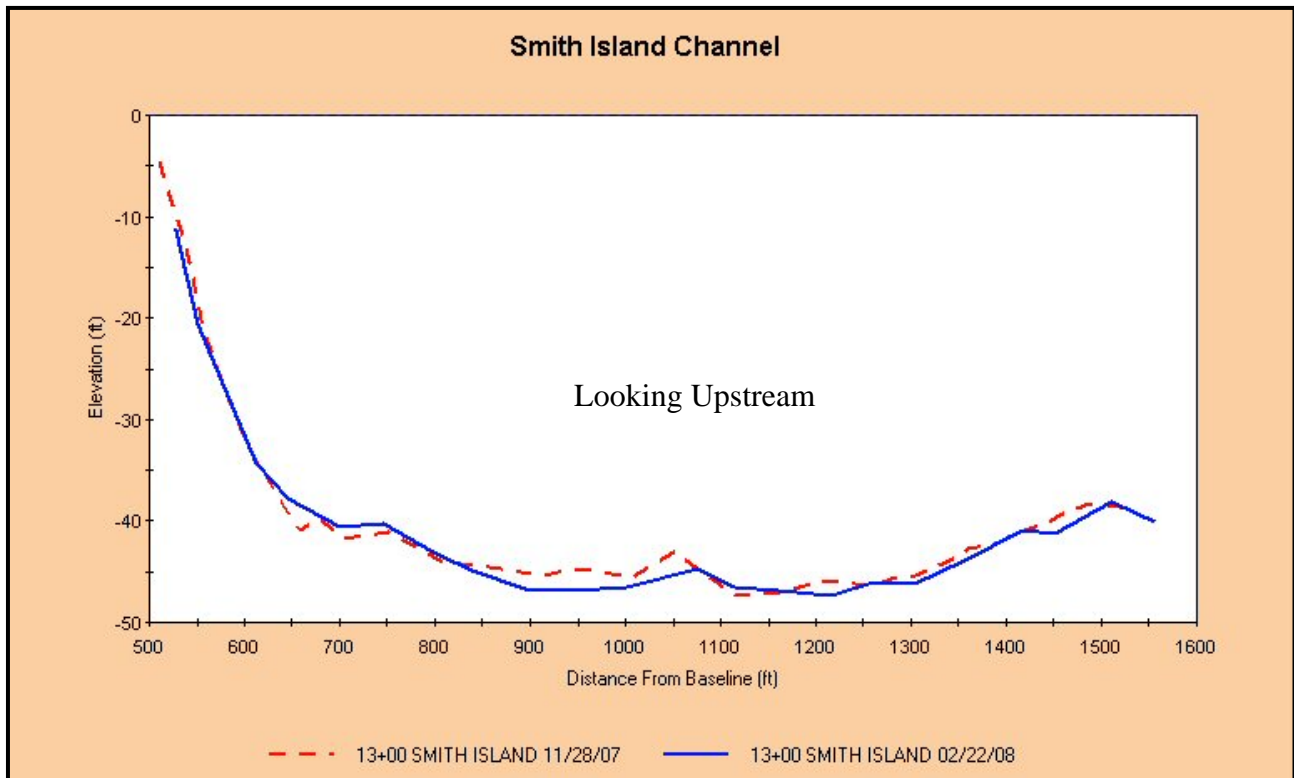


Figure 7 Smith Island Station 13+00

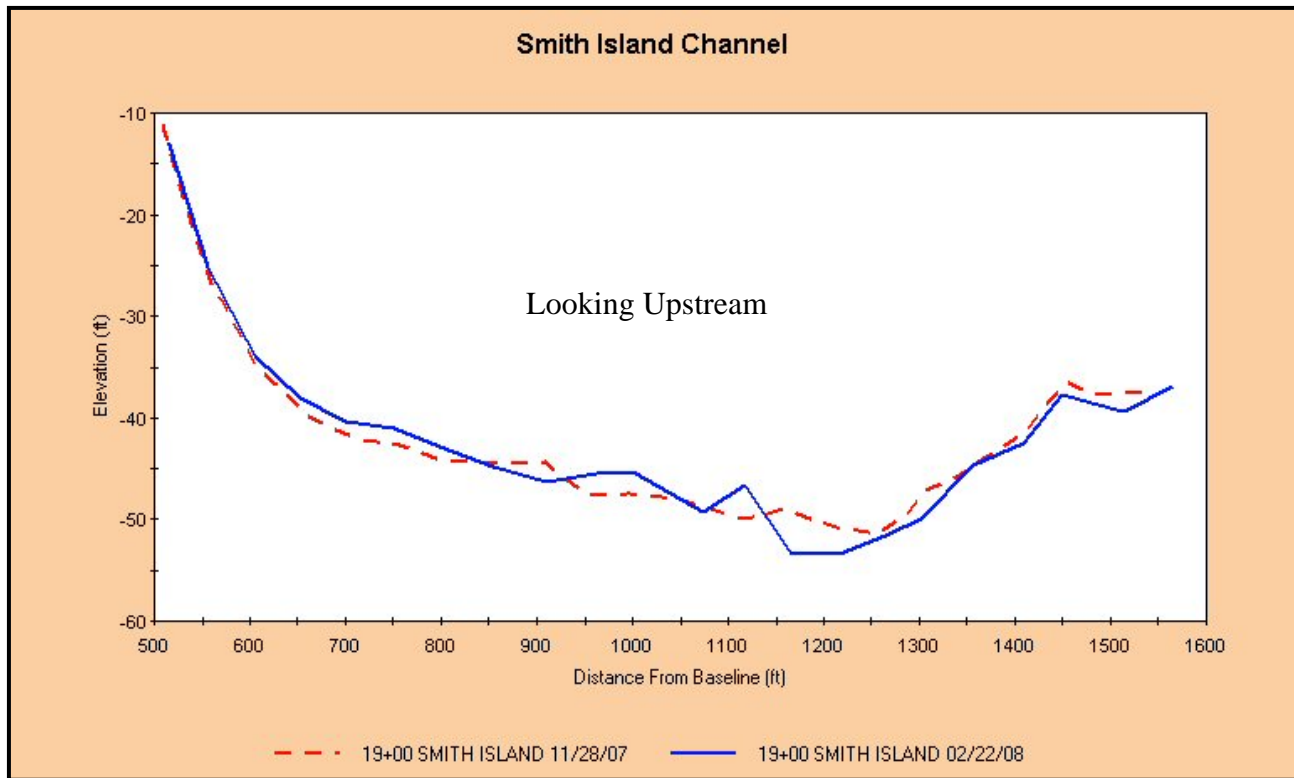


Figure 8 Smith Island Station 19+00

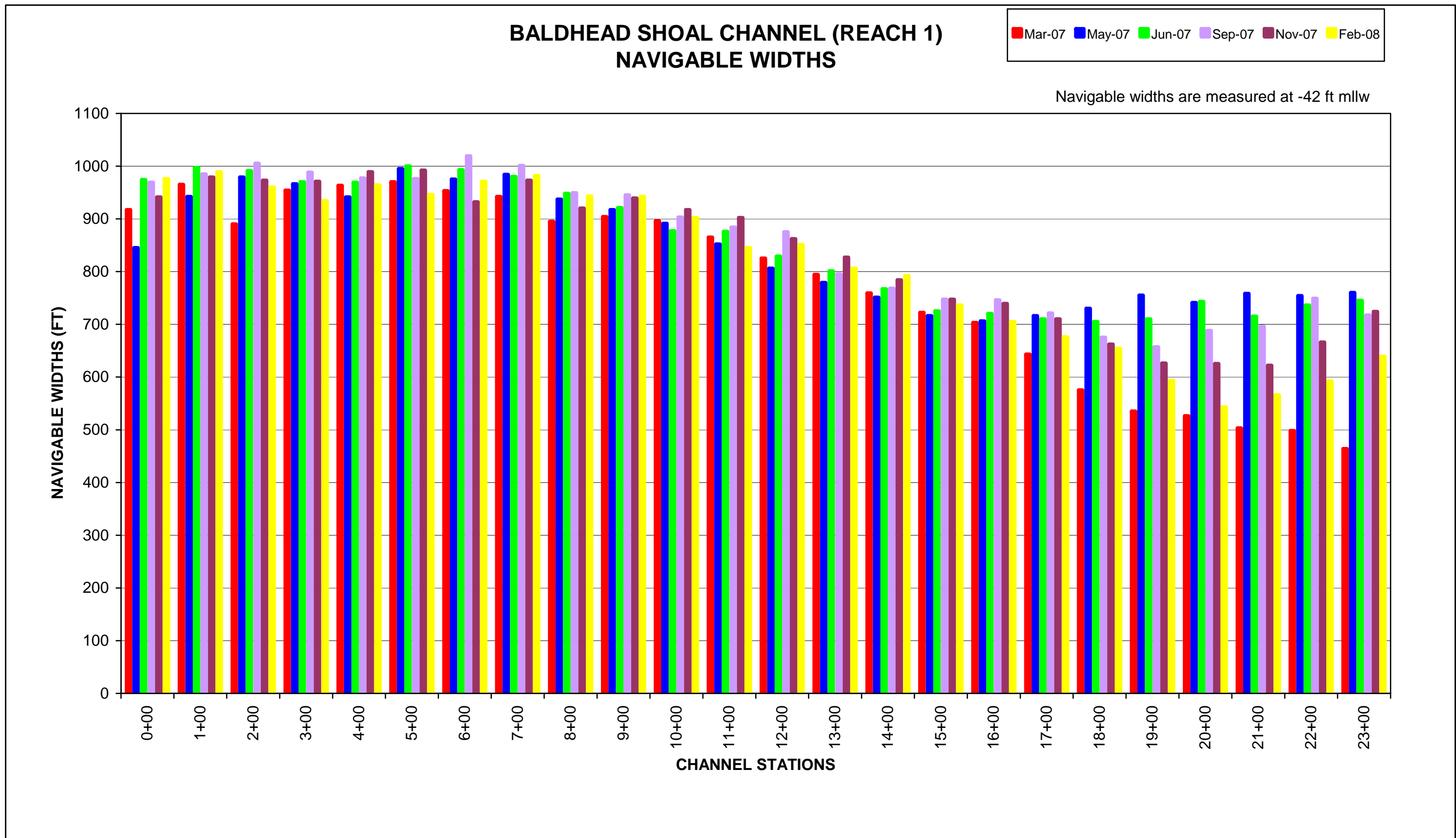


Figure 9 Baldhead Shoal Channel Reach 1 Navigable Widths – Stations 0+00 – 23+00

**BALDHEAD SHOAL CHANNEL (REACH 1)
NAVIGABLE WIDTHS**



Navigable widths are measured at -42 ft mllw

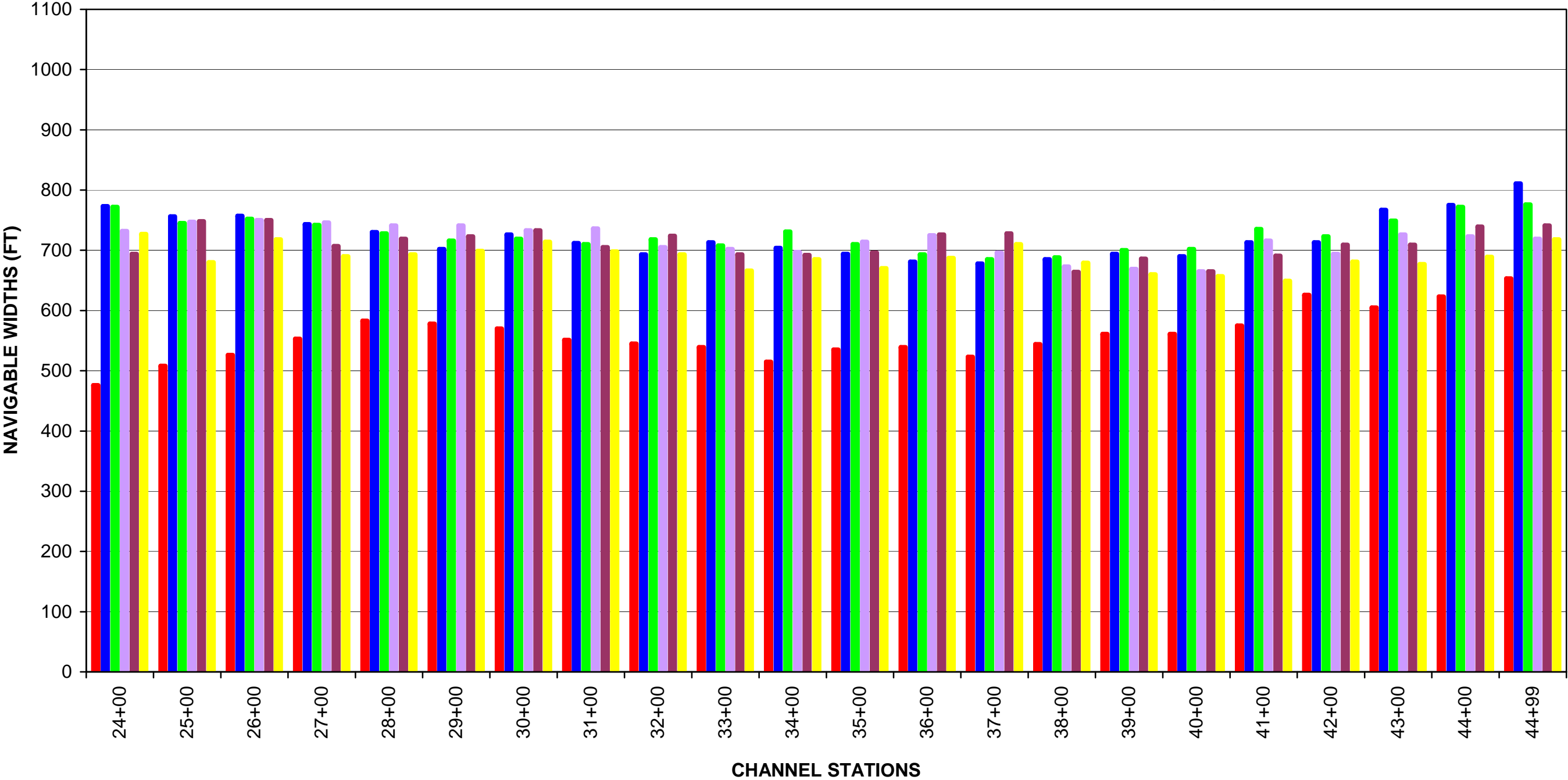


Figure 10 Baldhead Shoal Channel Reach 1 Navigable Widths – Stations 24+00 – 44+99

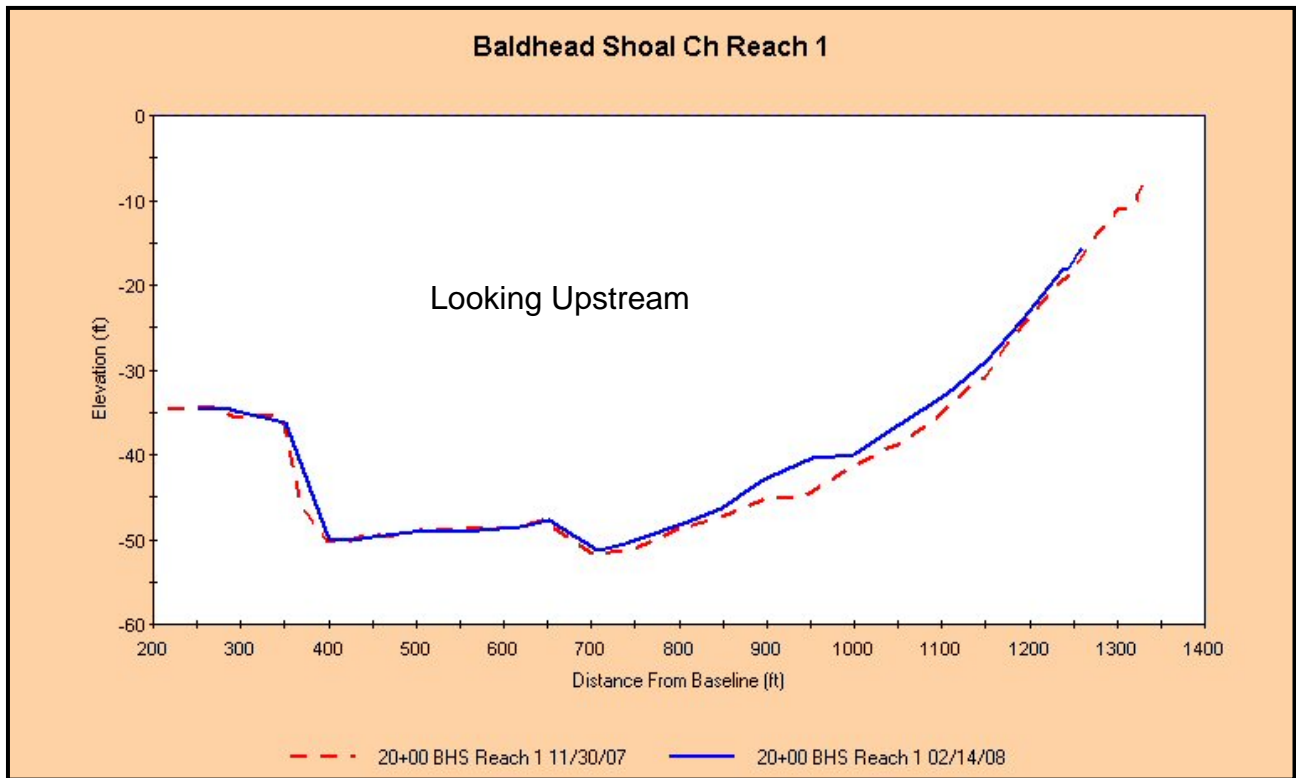


Figure 11 Baldhead Shoal Station 20+00

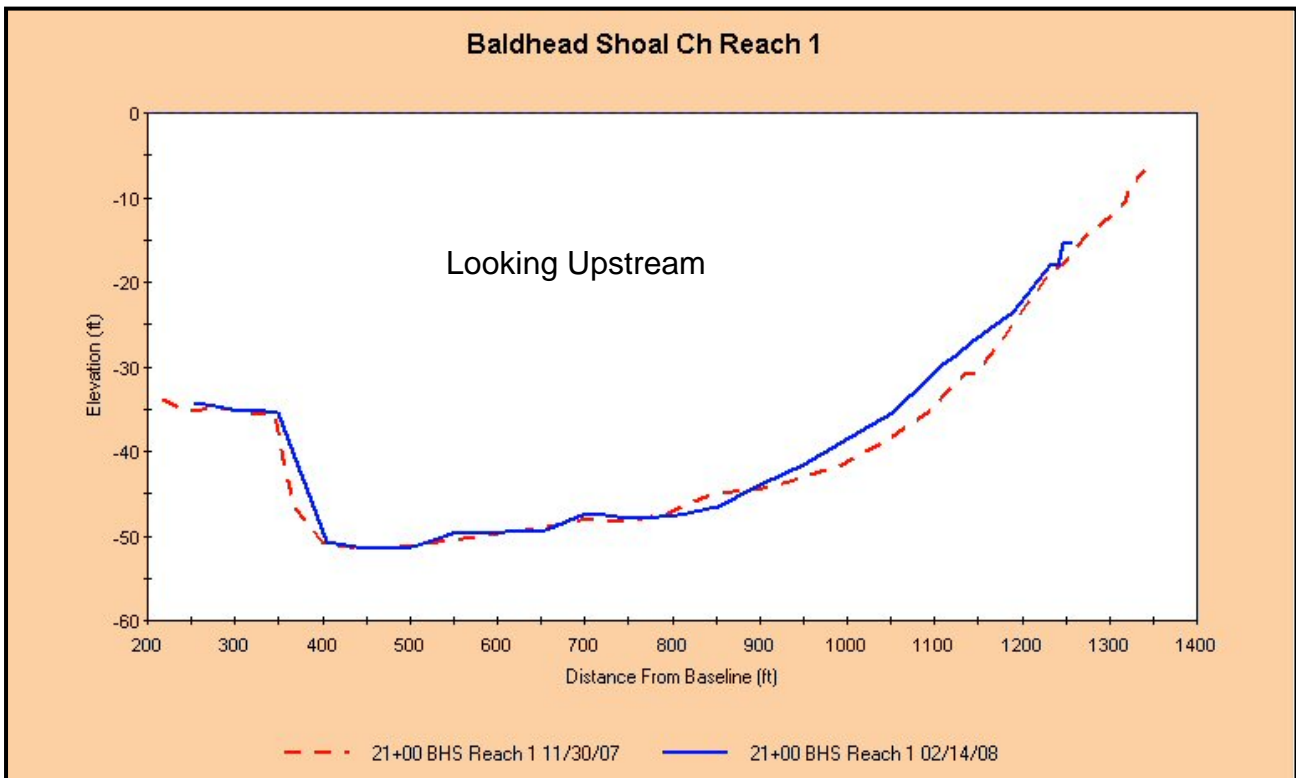


Figure 12 Baldhead Shoal Station 21+00

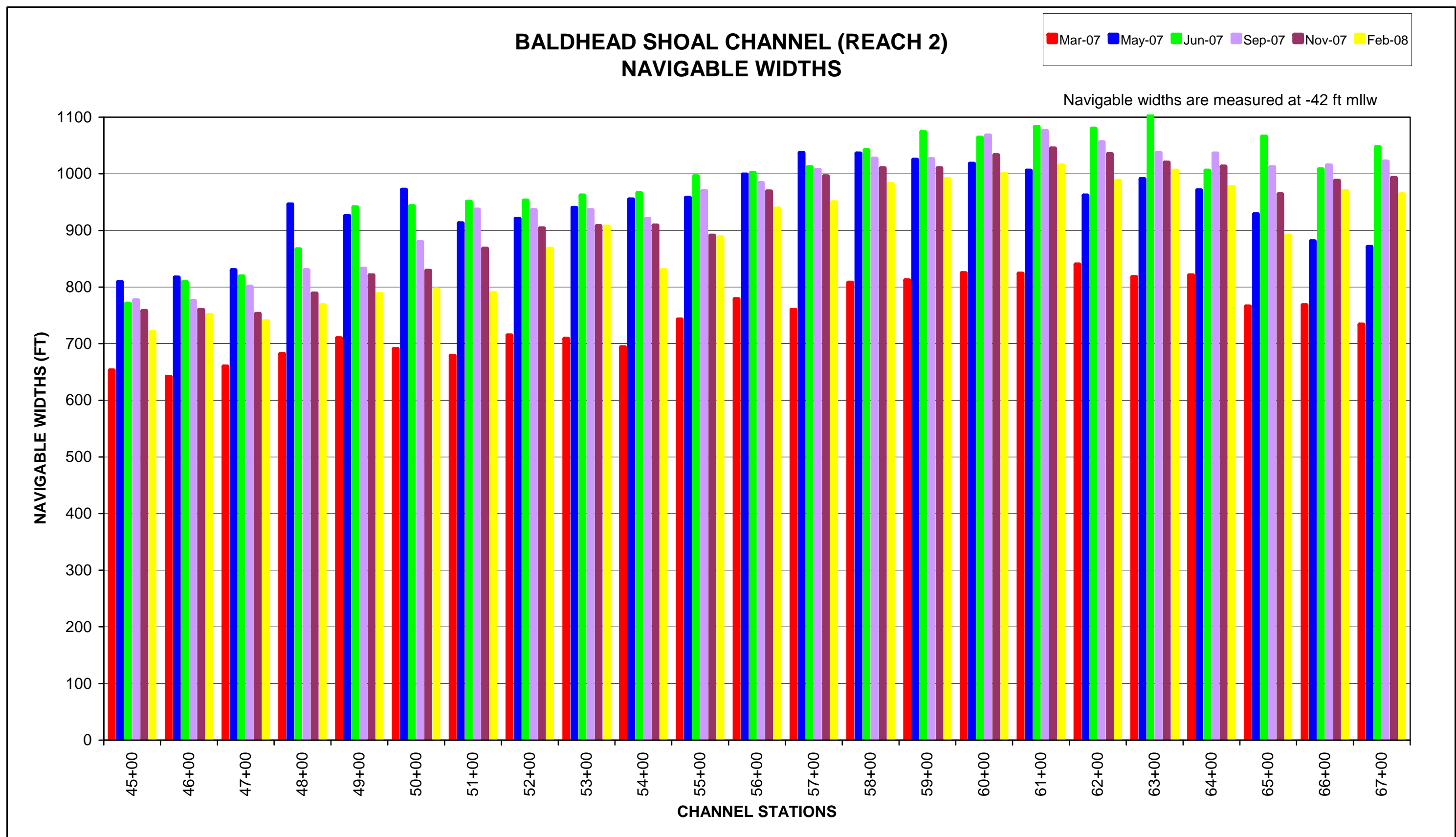


Figure 13 Baldhead Shoal Channel Reach 2 Navigable Widths – Stations 45+00 – 67+00

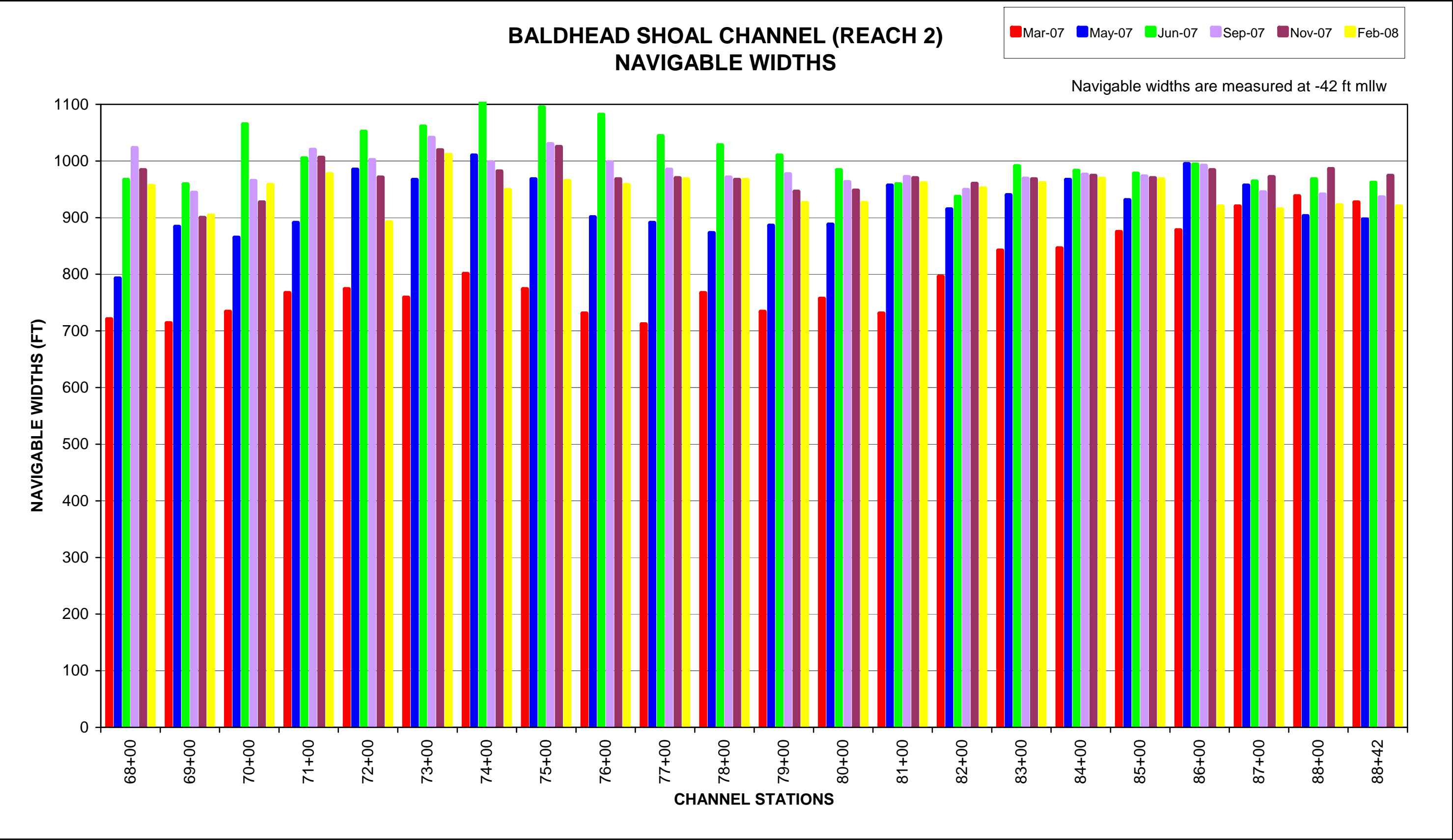


Figure 14 Baldhead Shoal Channel Reach 2 Navigable Widths – Stations 68+00 – 89+00

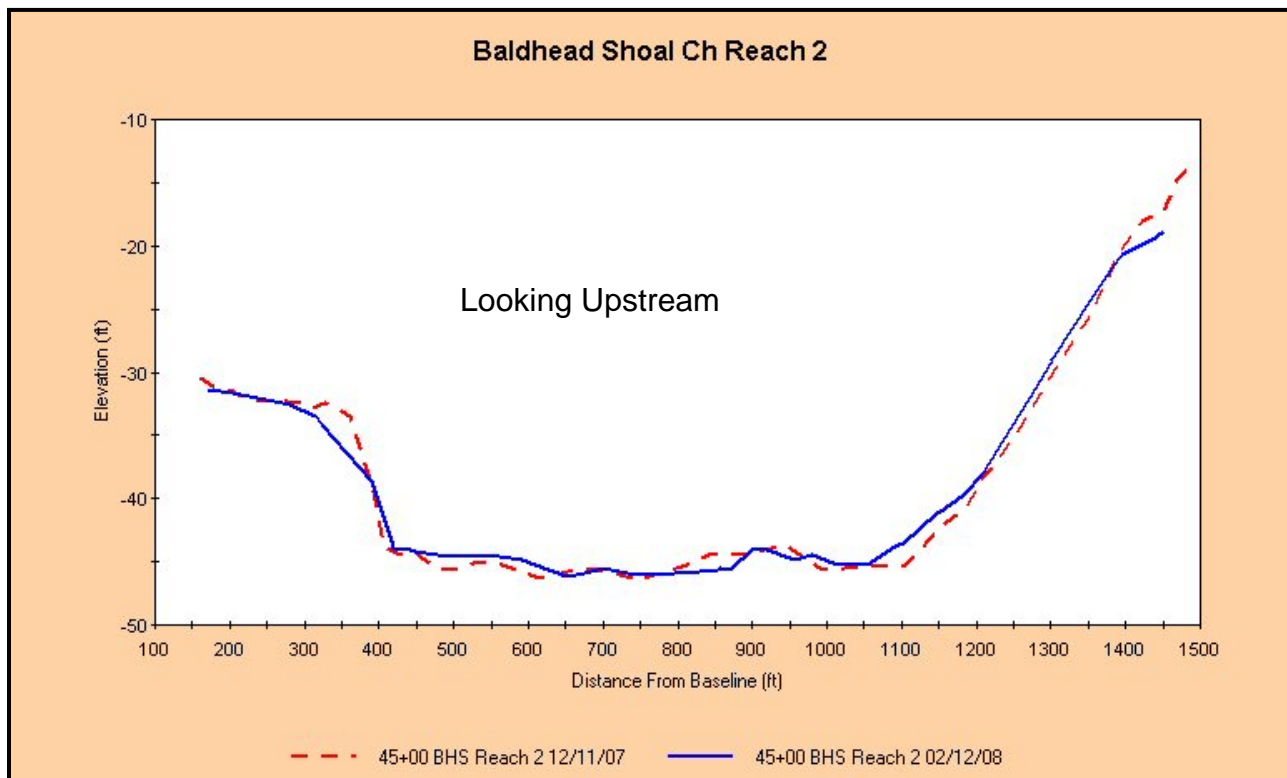


Figure 15 Baldhead Shoal Station 45+00

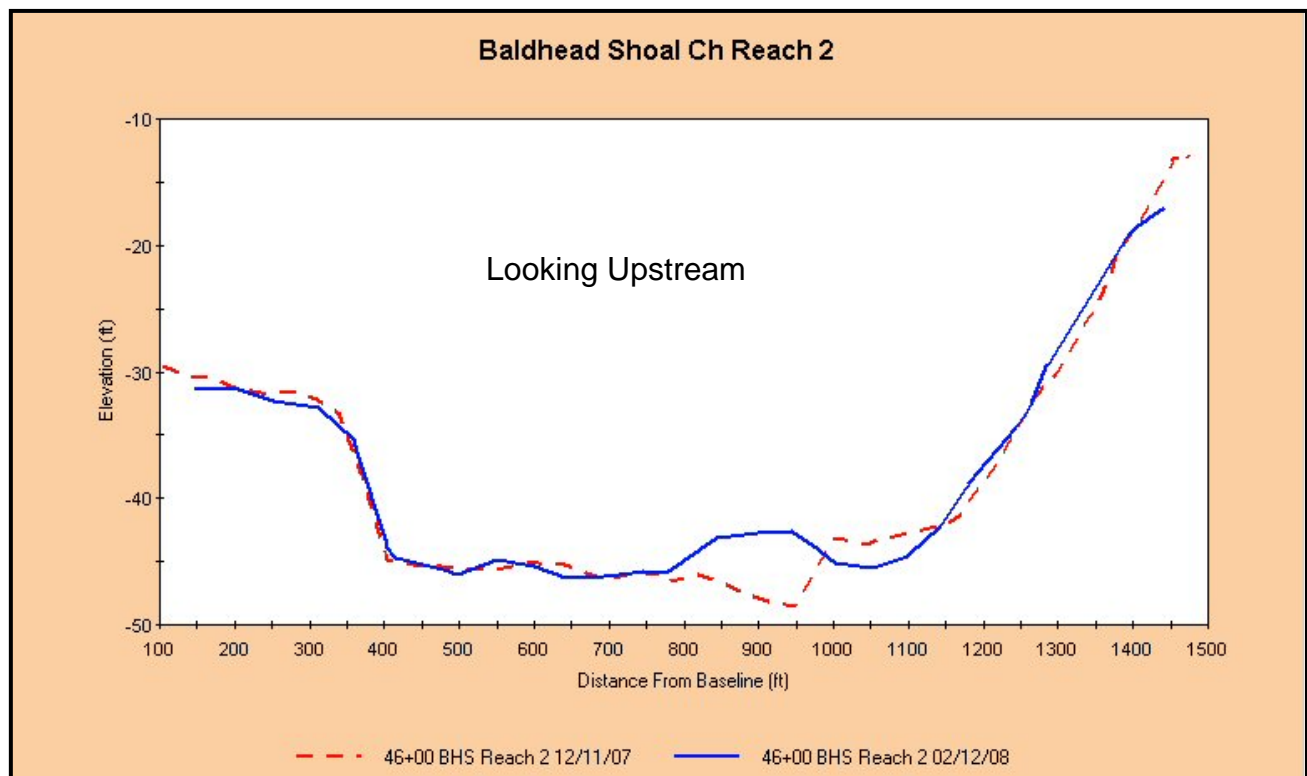


Figure 16 Baldhead Shoal Station 46+00

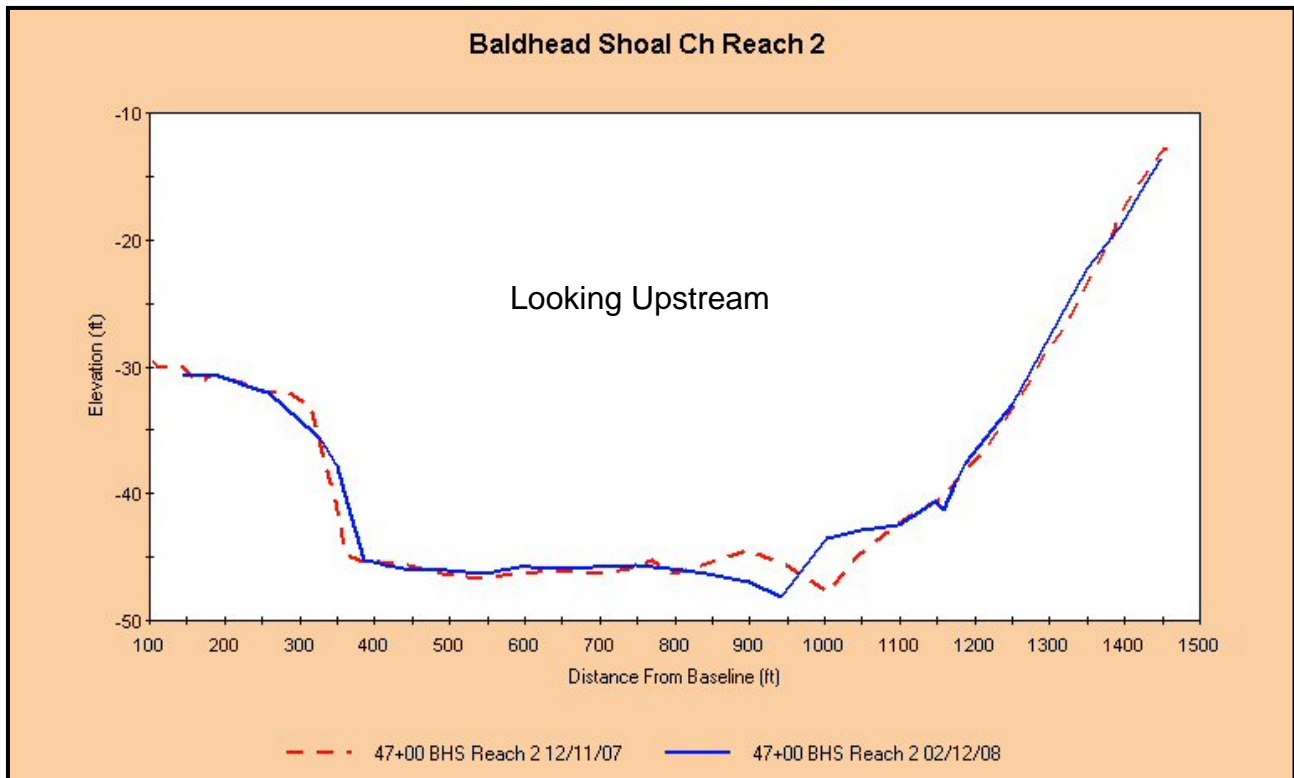


Figure 17 Baldhead Shoal Station 47+00